



Weighted estimation of the dependence function for an extreme-value distribution

Liang Peng, Linyi Qian, Jingping Yang

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Bivariate extreme-value distributions have been used in modeling extremes in environmental sciences and risk management. An important issue is estimating the dependence function, such as the Pickands dependence function. Some estimators for the Pickands dependence function have been studied by assuming that the marginals are known. Recently, Genest and Segers [Ann. Statist. 37 (2009) 2990-3022] derived the asymptotic distributions of those proposed estimators with marginal distributions replaced by the empirical distributions. In this article, we propose a class of weighted estimators including those of Genest and Segers (2009) as special cases. We propose a jackknife empirical likelihood method for constructing confidence intervals for the Pickands dependence function, which avoids estimating the complicated asymptotic variance. A simulation study demonstrates the effectiveness of our proposed jackknife empirical likelihood method.

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